IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant: Moctezuma de la Barrera	)
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Serial No.: 10/743,443	)
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Filed: December 19, 2003	)
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For: Reactive Workflow System and Method	)
	)
Group Art Unit: 3686	)
	)
Examiner: Rajiv J. Raj	)
	)
Docket No.: 29997/065	)
	)
Customer No.: 29471	)

APPEAL BRIEF

Mail Stop Appeal Brief-Patent
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Appeal Brief is filed in response to the final Office action dated October 26, 2010, and the Advisory Action dated January 21, 2011. A Notice of Appeal was timely filed with a two-month extension of time and a Pre-Appeal Brief Request for Review on February 25, 2011. A Notice of Panel Decision from Pre-Appeal Brief Review was issued on April 11, 2011. This Appeal Brief is being timely submitted within one month of the Notice of Panel Decision.

The Applicant respectfully requests that the Board of Patent Appeals and Interferences reverse the final rejections of claims 16, 18, 20-27, 29, 30, 35, and 37-50 of the present application.

(i) REAL PARTY IN INTEREST

The real party in interest is the assignee of record, Stryker Leibinger GmbH & Co. KG, having a place of business at Botzinger Strasse 41, 79111 Freiburg, Germany, which is a subsidiary of Stryker Corporation, 2825 Airview Boulevard, Kalamazoo, Michigan 49002.

(ii) RELATED APPEALS AND INTERFERENCES

None.

(iii) STATUS OF THE CLAIMS

The present application includes claims 16, 18, 20-27, 29, 30, 35, and 37-50, all of which stand finally rejected.

Claims 1-15, 17, 19, 28, 31-34, and 36 have been cancelled.

The applicant identifies claims 16, 18, 20-27, 29, 30, 35, and 37-50 as the claims that are subject to this appeal.

(iv) STATUS OF AMENDMENTS

The claims presently stand as presented in applicant's Amendment F, filed July 26, 2010.

Applicants' Amendment G, filed December 22, 2010, was not entered for purposes of this appeal.

(v) SUMMARY OF CLAIMED SUBJECT MATTER

Independent Claim 16

Independent claim 16 recites a computer navigation system (p. 5 lines 16–p. 6 line 20, Fig. 4, 200, 202) for implementing a multi-step surgical procedure (p. 3 lines 4–6, p. 6 lines 7–20), wherein the multi-step surgical procedure comprises a first sequence of steps (p. 3 lines 7–28). The computer navigation system comprises means for identifying a current step within the multi-step surgical procedure (§ 112, ¶ 6 recitation referring to, e.g., 100, 150 at least as shown in Figs. 1, 3 and described at p. 3 lines 4–11, p. 4 lines 22–24, p. 6 lines 7–10), means for identifying a component usable in the multi-step surgical procedure (§ 112, ¶ 6 recitation referring to, e.g., 102, 120–124, at least as shown in Figs. 1, 2 and described at p. 3 lines 11–16, p. 4 lines 1–20), means for analyzing steps of the surgical procedure including a step other than the current step or an immediately subsequent step in the first sequence (§ 112, ¶ 6 recitation referring to, e.g., 152–166, at least as shown in Fig. 3 and described at p. 4 lines 22–p. 5 line 14), means for identifying the consequent step as the first step analyzed for which the component is acceptable (§ 112, ¶ 6 recitation referring to, e.g., 104, 152–166, at least as shown in Figs. 1, 3 and described at p. 3 lines 16–19, p. 4 line 22–p. 5 line 13), and means for automatically jumping to (§ 112, ¶ 6 recitation referring to, e.g., 106, 154, 158, 162, at least as shown in Figs. 1, 3 and described at p. 3 lines 18–25, p. 4 line 26–p. 5 line 8, p. 6 lines 7–20) and displaying a representation related to the consequent step without direct interaction between a user and the computer navigation system (§ 112, ¶ 6 recitation referring to, e.g., 108, 204, at least as shown in Fig. 1, 4 and described at p. 3 lines 18–25, p. 5 lines 24–25, p. 6 lines 10–20).

Independent Claim 35

Independent claim 35 recites a method performed by a computer navigation system (p. 5 lines 16–p. 6 line 20, Fig. 4, 200, 202) of determining and displaying a consequent step of a procedure comprising a first sequence of steps (p. 3 lines 4–28, p. 6 lines 7–20). The method comprises identifying a current step of the procedure (p. 4 lines 22–24, p. 6 lines 22–24, Fig. 3, 150), identifying a component usable in at least one step of the procedure (p. 4 lines 1–20, p. 6 lines 23–24, Figs. 2 and 5, 120–124, 300), and identifying a location of the component within a field of tracking of the computer navigation system (p. 6 lines 24–25, Fig. 5, 302). Then the

method includes analyzing whether the component is acceptable for use in steps of the surgical procedure including a step other than the current step or an immediately subsequent step in the first sequence (p. 4 line 22–p. 5 line 13, Fig. 3, 152–166), and determining the consequent step based on the location, the identity of the component, and the identity of the current step (p. 6 lines 25–28, Fig. 5, 304). Further, based on the determination of the consequent step (p. 4 line 26–p. 5 line 8, p. 6 lines 28–29 Figs. 3 and 5, 154, 158, 162, 306), a representation related to the consequent step is displayed on a display unit (p. 5 lines 24–25, p. 6 lines 10–20, Fig. 4, 204).

Independent Claim 37

Independent claim 37 recites a method performed by a computer navigation system (p. 5 lines 16–p. 6 line 20, Fig. 4, 200, 202) of determining and displaying a consequent step of a surgical procedure comprising a first sequence of steps (p. 3 lines 4–28, p. 6 lines 7–20). The method comprises identifying a current step of the surgical procedure (p. 3 lines 4–11, p. 4 lines 22–24, p. 6 lines 7–10, Figs. 1 and 3, 100, 150), identifying a component being tracked by the computer navigation system that is to be utilized in at least one step of the surgical procedure (p. 3 lines 11–19, p 4. lines 1–20, Figs. 1 and 2, 102, 120–124), and analyzing steps of the surgical procedure including a step other than the current step or an immediately subsequent step in the first sequence (p. 4 lines 22–p. 5 line 14, Fig. 3, 152–166). The method further includes identifying the consequent step as the first step analyzed for which the component is acceptable (p. 3 lines 16–19, p. 4 line 22–p. 5 line 13, Figs. 1 and 3, 104, 152–166), and automatically jumping to the consequent step (p. 3 lines 18–25, p. 4 line 26–p. 5 line 8, p. 6 lines 7–20, Fig. 1 and 3, 106, 154, 158, 162) and displaying a representation related to the consequent step on a display unit (p. 3 lines 18–22, p. 5 lines 24–25, p. 6 lines 10–20, Figs. 1 and 4, 108, 204).

The <u>remaining claims</u> are not argued separately.

(vi) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

- Claims 35 and 37-50 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter.
- Claims 16 and 37 stand rejected under 35 U.S.C. § 112 as being indefinite.
- Claims 16, 18, 20-27, 29, 30, 35, and 37-50 stand rejected under 35 U.S.C. § 103(a) as obvious over Malackowski et al. U.S. Patent Application Publication No. 2003/0093103 (hereinafter, "Malackowski") in view of Van Der Brug U.S. Patent No. 5,954,648 and DiGioia et al. U.S. Patent No. 6,205,411 (hereinafter, "DiGioia").

(vii) ARGUMENT

I. The rejections of claims 35 and 37-50 as being directed to non-statutory subject matter under 35 U.S.C. § 101 are clear legal error under the Supreme Court decision in *Bilski v. Kappos*.

Claims 35 and 37-50 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. These rejections are traversed as clear legal error.

Under 35 U.S.C. § 101, "[w]hoever invents a new and useful process . . . may obtain a patent therefore, subject to the conditions and requirements of this title." In *Bilski v. Kappos*, 130 S. Ct. 3218 (2010), the Supreme Court clarified that there are only three specific judicially created exceptions to the plain meaning of this statutory right: laws of nature; physical phenomena; and abstract ideas. *Id.*, at 3225. Further, although the machine-or-transformation test is a useful clue as to patent eligibility of process claims under § 101, it is not the sole test for deciding whether an invention is patent eligible. *Id.*, at 3227. However, a "claimed process is surely patent-eligible under 35 U.S.C. § 101 if: (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing." *In re Bilski*, 545 F.3d 943, 952 (Fed. Cir. 2008) (en banc), *aff'd sub nom. Bilski v. Kappos*, 130 S. Ct. 3218 (2010). Further, the transformation of raw data into a particular visual depiction of a physical object on a computer display screen is sufficient to render a claimed process invention patent eligible. *See, e.g.,id.* at 962.

As an initial matter, the pending Section 101 rejections are legally insufficient because they do not analyze the claim language in accordance with the current state of the law. As very

clearly articulated by the Supreme Court, the only three judicially recognized exceptions to the statutory categories that can support a Section 101 rejection are laws of nature, physical phenomena, and abstract ideas. The pending rejections, however, do not provide any argument or evidence that the methods recited in claims 35 and 37-50 fall into any one of these categories. Rather, the pending rejections improperly rely solely on the machine-or-transformation test, which the Supreme Court has clearly articulated as being improper. Therefore, these rejections are not based on the legal requirements for making such rejections and are improper for at least this reason.

Even if the examiner presents some argument related to the proper legal analysis, each of independent claims 35 and 37 is directly tied to a particular machine and transforms a particular article into a different state. Specifically, each of claims 35 and 37 are methods that are recited as being "performed by a computer navigation system," which is a particular machine. Thus, the methods in claims 35 and 37 are both clearly tied to a computer navigation system.

Further, the computer navigation system is central to the invention. All of the steps of the methods are performed by the computer navigation system. Claim 35 also recites the step of "identifying a location of the component within a field of tracking of the computer navigation system," and claim 37 also recites the step of "identifying a component being tracked by the computer navigation system." These steps in the bodies of the respective recited methods indicate that the functioning of the computer navigation system to track the location of a component within its field of tracking is central to completion of the method. Thus, the computer navigation system is not merely insignificant post-solution activity, but is central to the entire functionality of the recited inventions.

In addition, claim 35 recites at the end of the method the step of "based on the determination of the consequent step, displaying a representation related to the consequent step on a display unit," and claim 37 recites the step of "displaying a representation related to a consequent step on a display unit." The Federal Circuit has indicated that the transformation of raw data into a particular visual depiction of a physical object on a computer display screen is sufficient to render a claimed process invention patent eligible. *See, e.g., Bilski*, 545 F.3d at 962. The act of displaying a representation related to the consequent step on a display unit clearly transforms raw data into a particular visual depiction and thereby transforms the display unit itself by creating the visual depiction on the display unit.

Consequently, the methods of claims 35 and 37-50 are not reciting merely an abstract idea and in fact, they are intimately tied to at least one particular machine and transform at least some matter, all in accordance with the Supreme Court decision in *Bilski v. Kappos*. Therefore, the rejections under 35 U.S.C. § 101 are clear legal error and must be withdrawn.

II. The rejections of claims 16 and 37 as being indefinite under 35 U.S.C. § 112 are based on a clear error of law.

A. The antecedent basis rejection of claim 16 is improper because the objected to phrase is not indefinite.

Independent claim 16 has been rejected under 35 U.S.C. § 112 as indefinite for lack of antecedent basis for the claim term "the consequent step." This rejection is improper because it is clear from the specification that there is only one "consequent step" possible under the conditions recited in the claim. Claim 16 recites that the consequent step is "the first step analyzed for which the component is acceptable." By definition, there can only be one "first step," and therefore, this claim recitation cannot be indefinite. As § 2173.05(e) of the M.P.E.P. states: "Inherent components of elements recited have antecedent basis in the recitation of the components themselves. For example, the limitation 'the outer surface of said sphere' would not require an antecedent recitation that the sphere has an outer surface." Furthermore, claims are to be read in light of the specification and not interpreted in a vacuum. *See Slimfold Mfg Co., Inc. v. Kinkead Indus., Inc.*, 810 F.2d 1113, 1116-17 (Fed. Cir. 1987) (no lack of antecedent basis for "said collar" when there was only one collar shown in the specification). Thus, this rejection is contrary to the law. In fact, this claim term would be less definite if the claim recited "a consequent step" because such language would confusingly suggest that there might be other such consequent steps. However, because there can be only one "first step analyzed for which the component is acceptable," the use of the definite article "the" is appropriate, and this rejection should be withdrawn.

B. The phrase "identifying the consequent step" in claims 16 and 37 is not unclear to a person of ordinary skill in the art.

Independent claims 16 and 37 and all claims dependent thereon also stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter, which Applicant regards as the invention. Specifically, it is alleged in the Office action that "[i]t is unclear to the Office what '*identifying the consequent*

step' mean[s], and further what step is being identified or what step is the consequent step" (emphasis in original). Because claim construction is a question of law, this rejection is a clear error of law based on an erroneous claim construction.

"Claim definiteness is analyzed not in a vacuum, but always in light of the teachings of the prior art and of the particular application disclosure as it would be interpreted by one possessing the ordinary level of skill in the pertinent art. . . . The definiteness inquiry focuses on whether those skilled in the art would understand the scope of the claim when the claim is read in light of the rest of the specification." *Energizer Holdings, Inc. v. ITC*, 435 F.3d 1366, 1370 (Fed. Cir. 2006) (internal citation and quotation marks omitted).

The word "identifying" has a clear and well known meaning in the English language and need not be elaborated in detail herein.

The word "consequent" also has a clear meaning in common usage in the English language and in the context of the present disclosure. A commonly understood and accepted meaning of the word "consequent" applicable in the present context is: "following [especially] as a result". Webster's Third New International Dictionary, 483 (2002). The description of the disclosed embodiments in the specification also make it perfectly clear to any person of ordinary skill in the art that the "consequent step" is the step that is identified by the computer navigation system as following the current step and the result of a determination or analysis based on the various enumerated factors. The contextual language of the claims also makes it clear that the consequent step is "the first step analyzed [by the computer navigation system] for which the component is acceptable." Therefore, under any construction consistent with standard recognized English usage and in context with the claim language as a whole and the specification, the "consequent step" is the step that follows as a result of a determination made by the computer navigation system. The determination relates to which step in the multi-step operation should be displayed on the navigation screen at any given time as a consequence of the then present conditions. In the present invention, the consequent step to be performed after the current step can be a step other than the current step or the next step, such as the previous step or a step after the next step, depending on, among other things, what tool is identified by the computer navigation system and what the identity of the current step is. Thus, the step of determining a consequent step involves determining what step out of several possible choices should be performed next as a consequence of the present conditions recited.

Because the objected-to words of the claim, "identifying the consequent step," are clear, concise, have well recognized meanings in the English language, and are well within the understanding of a person of ordinary skill in the art in view of the specification and the claim language as a whole, this claim language is not indefinite as a matter of law. Therefore, this rejection should be withdrawn.

It should be noted that all of these Section 112 rejections would also have been overcome by the amendments presented in Amendment G, which would have replaced the term "identifying" with the previously used and accepted term "determining" and changed the objected-to "the" to an "a." The applicant would still be willing to offer such amendments to overcome these rejections and reduce the number of issues on appeal if such amendments would be entered.

III. The applied references do not anticipate or render obvious the invention as recited variously in independent claims 16, 15, and 37.

Independent claim 16 recites a computer navigation system for implementing a multi-step surgical procedure that comprises a first sequence of steps, wherein the computer navigation system comprises means for identifying a current step within the multi-step surgical procedure, means for analyzing steps of the surgical procedure including a step other than the current step or an immediately subsequent step in the first sequence, and means for identifying the consequent step as the first step analyzed for which the component is acceptable.

Independent claim 35 recites a method performed by a computer navigation system of determining and displaying a consequent step of a procedure comprising a first sequence of steps, the method comprising identifying a current step of the procedure, identifying a location of the component within a field of tracking of the computer navigation system, and analyzing whether the component is acceptable for use in steps of the surgical procedure including a step other than the current step or an immediately subsequent step in the first sequence.

Independent claim 37 recites a method performed by a computer navigation system of determining and displaying a consequent step of a surgical procedure comprising a first sequence of steps, the method including identifying a current step of the surgical procedure, identifying a component being tracked by the computer navigation system that is to be utilized in at least one step of the surgical procedure, analyzing steps of the surgical procedure including a step other than the current step or an immediately subsequent step in the first sequence, and identifying the

consequent step as the first step analyzed for which the component is acceptable.

A. The applied references disclose or suggest in relevant part simply analyzing the status of the current step and the immediately next step in a pre-defined sequence of steps.

Malackowski discloses a surgical navigation system that implements a multi-step surgical procedure that reacts to identifying information from a surgical tool by displaying a warning and/or preventing actuation of the next step if the tool has unsatisfactory parameters for the next step in a predetermined sequence of surgical steps. Malackowski in relevant part at most suggests that the surgical navigation system selects the appropriate response (i.e., remain in the current step, advance to the immediately subsequent step, or display a warning) based on what the current step and the immediately next step in the pre-defined multi-step surgical procedure are supposed to be.

Van Der Brug discloses a surgical navigation system that, in relevant part, discloses only that the surgical navigation system tracks the location of a surgical instrument within a surgical field and shows that position on a monitor in registration with an image of a patient being operated on.

DiGioia discloses a computer-assisted surgery planner and intra-operative guidance system including a navigation system running a program that advances progressively through a pre-defined sequence of pre-operative planning steps and intra-operative surgery steps. The sequence of the steps performed by the program is fixed.

Based on this understanding, the applied references in relevant part at most suggest that, based on an identity of a surgical tool, a computer navigation system could select a consequent step in a multi-step surgical procedure from at most either the current step or an immediately subsequent step in the sequence of the procedure, not a from a step that occurred before the current step or one that occurs after the immediate next step. Moreover, if an inappropriate tool is introduced within the field of the computer navigation system, these references at most suggest presenting a warning to the surgeon that the wrong tool is being used and/or not advancing the program to the next step.

B. The applied references do not disclose or suggest that the consequent step selected based on the identity of the current step and the surgical tool could be selected from a group including a step other than the current step or the immediately subsequent step in the pre-selected sequence of the procedure.

It is averred in the Office action that Malackowski discloses the limitation of a means for analyzing or the step of analyzing "a step other than the current step or an immediately subsequent step" as recited variously in claims 16, 35, and 37. (*See*, Final O.A., at pages 4, 11, and 13.) This assertion is traversed. As explained above, Malackowski discloses a surgical navigation system that implements a multi-step surgical procedure and reacts to identifying information from a surgical tool by displaying a warning and/or preventing actuation of the next step if the tool has unsatisfactory parameters for the next step in a predetermined sequence of surgical steps. However, Malackowski does not disclose that the surgical navigation system reacts by selecting a consequent step from a group of steps that include a step other than the current step or an immediately subsequent step in the sequence of the multi-step procedure.

The rejections of claims 16, 35, and 37 are further supported, in part, on the language contained in claim 19 of Malackowski. Claim 19, however, merely disclose that a series of steps are performed in a specific sequence, and that after a certain determination is made in the current step, the next step in that sequence is performed. That portion of Malackowski therefore at most suggests that the surgical navigation system advances to the next step in a pre-determined multi-step surgical procedure based on the results of the current step.

The reasoning in the final Office action also relies on Fig. 21 and "Items:350 & related text" to support the rejections of claims 16, 35, and 37. Those sections, however, merely illustrate how the surgical navigation system in Malackowski receives and uses data from various components to assist the surgeon during the surgical procedure.

Further, the reasoning in the final Office action relies on paragraphs [0154-0158] of Malackowski to support the rejection of at least claim 35. However, paragraphs [0154-0158] simply describe a procedure wherein, at each step of the surgical procedure, the surgical navigation system determines only if it is appropriate to advance to the immediately next step of the procedure.

The aforementioned portions of Malackowski, however, do not disclose or suggest that the navigation system analyzes whether a tool or component for use in the surgical procedure is

acceptable for use in any steps other than the current step or the immediately next step of the procedure.

In addition, it is not averred in the final rejections that either Van Der Brug or DiGioia supports these rejections; and in fact, neither reference discloses nor suggests the aforementioned limitation. In fact, Van Der Brug does not disclose that the surgical navigation system selects any steps of a multi-step procedure based on any identity of the surgical tool. DiGioia does not disclose or suggest that the navigation system would ascertain an identity of a surgical tool and select a consequent surgical step that is any other step than the immediately next step in the pre-defined sequence of the multi-step procedure.

For at least this reason, claims 16, 35, and 37 are novel and not obvious over the applied references.

C. Malackowski does not disclose a step of determining the consequent step based on the location, the identity of the component, and the identity of the current step as required by claim 35.

It is alleged on page 11 of the Office action that Malackowski discloses the step of "*determining the consequent step based on the location, the identity of the component, and the identity of the current step;* (see at least Malackowski [0087]", as recited in claim 35. This allegation is traversed.

Paragraph [0087] of Malackowski discusses how a surgical navigation system uses data contained in a chip in a cutting accessory to configure the system so that it operates in a particular manner given the specific characteristics of the cutting accessory. The system is configured so that, for example, a hand piece motor will run at a preferred speed and in a preferred mode for the cutting accessory when the system identifies the cutting accessory. Malackowski, therefore, at most discloses that attributes used in the next step of the pre-determined sequence are based on the location and identity of the component. Malackowski does not mention in paragraph [0087] or elsewhere a step of determining the consequent step, which can be a step other than the current or immediately subsequent step, based on the location and identity of the component.

Further, it is conceded in the Office action that the limitation "identifying a current step" contained in claims 16, 35, and 37 is not disclosed in Malackowski. (*See*, Final O.A., at pages 11-12.) Thus, because Malackowski does not disclose the limitation of "identifying a current

step" as conceded in the Office action, it is factually impossible for Malackowski to disclose that the selection of the consequent step is based on the location, identity of the component, and the identity of the current step. Thus, Malackowski does not disclose the deficiency identified herein, and the allegations to the contrary in the pending Office action is traversed as being clear factual error.

Therefore, claim 35 is novel and not obvious over the applied references for these additional reasons.

D. The claimed invention provides significant benefits over the applied references.

The use of the terms "current step" and "immediately subsequent step" have meaning in the present claims that defines the invention in terms of what is occurring at any instant in time, not what happens collectively over the entire duration of the program. Thus, if as the applied references teach, a computer navigation system advances at various times through an exemplary procedure with pre-defined steps 1 through 10 in ascending order, when the system is at step 1 it analyzes the current step, i.e., step 1, and the immediately next step, i.e., step 2. When the system advances to step 2, it will again analyze the *then* current step, i.e., step 2, and the *then* immediately next step, i.e., step 3. This process of analyzing the current step and the immediately subsequent step is repeated until the program is completed at step 10. In this process, the theoretical system of the applied references is severely limited to simply providing a warning signal if the surgeon uses a tool that is not supposed to be used during the current step or the immediately subsequent step of the surgical procedure at any given point. If the surgeon desires to, for example, move the program from step 4 to step 2 or to step 7 of the exemplary 10-step procedure, the computer navigation system is not able to automatically follow the surgeon's wishes without having someone intervene with the computer to re-orient the software back to step 2 or forward to step 7. More specifically, the prior art would require the surgeon or some other operator to manually re-direct the surgical procedure to the desired step of the procedure by using a keyboard or mouse for example, if the component introduced into the tracking field is not acceptable for use in the current step or the immediate next step of the pre-defined sequence of surgical steps. Such manual intervention required by the prior art can be cumbersome and undesirable in the operating room environment.

In contrast, the invention(s) as claimed variously in the claims at issue overcomes this deficiency in the applied references by allowing the surgical navigation system to follow the

selections of tools and/or components made by the surgeon during the procedure without requiring direct intervention with the software by a user, such as on a keyboard or other input device, to re-direct the software to a consequent step, even if the consequent step is a step other than the current step or the immediately next step in the pre-defined sequence of steps in the procedure. As explained in the specification, this allows the surgeon to jump to other steps in the procedure by merely introducing a new component into the tracking field of view of the navigation system and eliminates the need to manually re-set the surgical procedure if the component is to be used in a step other than the current step or the immediately next step. Therefore, the present invention is a substantial improvement over the prior art references by eliminating or reducing the need for such direct intervention with the navigation system.

Because the applied references do not disclose or suggest every element of claims 16, 35, and 37, and all claims dependent thereon, the invention as recited variously therein is novel and patentable over the applied references. The same arguments apply equally to claims 18, 20-27, 29, 30, and 38-50 dependent variously thereon and are not argued separately herein.

IV. Conclusion

All of the pending rejections having been fully addressed and rebutted herein, reversal of the pending rejections and allowance of the claims at issue is requested.

Respectfully submitted,

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(viii) CLAIMS APPENDIX

16. A computer navigation system for implementing a multi-step surgical procedure, wherein the multi-step surgical procedure comprises a first sequence of steps, the computer navigation system comprising:

means for identifying a current step within the multi-step surgical procedure;

means for identifying a component usable in the multi-step surgical procedure;

means for analyzing steps of the surgical procedure including a step other than the current step or an immediately subsequent step in the first sequence;

means for identifying the consequent step as the first step analyzed for which the component is acceptable; and

means for automatically jumping to and displaying a representation related to the consequent step without direct interaction between a user and the computer navigation system.

18. The system of claim 16 that includes means for identifying a particular location of the component, and means for identifying the consequent step based on the location.

20. The system of claim 16 wherein the component is a multipart component capable of self-identifying the component's composite parts.

21. The system of claim 20 wherein the multipart component is a tool with an attached device wherein the tool can identify the attached device.

22. The system of claim 20 wherein the multipart component is a tool with an attached device wherein the attached device is separately identifiable.

23. The system of claim 18 wherein the means for identifying a particular location of the component is incorporated within the computer navigation system.

24. The system of claim 16 that includes means for configuring the consequent step with a parameter of the component.

25. The system of claim 16 wherein the consequent step comprises a warning that the component is inappropriate for any step that is analyzed.

26. The system of claim 16 wherein the consequent step includes controlling a piece of auxiliary apparatus.

27. The system of claim 16 that includes means for identifying an additional component and means for determining the consequent step based on the identity of the additional component.

29. The system of claim 16 wherein the multi-step surgical procedure is a computer controlled and directed surgical procedure.

30. The system of claim 16 that includes a database of user preferences and means for determining the consequent step based on the database.

35. A method performed by a computer navigation system of determining and displaying a consequent step of a procedure comprising a first sequence of steps, the method comprising:

identifying a current step of the procedure;

identifying a component usable in at least one step of the procedure;

identifying a location of the component within a field of tracking of the computer navigation system;

analyzing whether the component is acceptable for use in steps of the surgical procedure including a step other than the current step or an immediately subsequent step in the first sequence;

determining the consequent step based on the location, the identity of the component, and the identity of the current step; and

based on the determination of the consequent step, displaying a representation related to the consequent step on a display unit.

37. A method performed by a computer navigation system of determining and displaying a consequent step of a surgical procedure comprising a first sequence of steps, the method comprising:

identifying a current step of the surgical procedure;

identifying a component being tracked by the computer navigation system that is to be utilized in at least one step of the surgical procedure;

analyzing steps of the surgical procedure including a step other than the current step or an immediately subsequent step in the first sequence;

identifying the consequent step as the first step analyzed for which the component is acceptable; and

automatically jumping to the consequent step and displaying a representation related to the consequent step on a display unit.

38. The method of claim 37, wherein the steps of the surgical procedure are analyzed according to a second sequence, wherein the second sequence depends upon the identity of the current step.

39. The method of claim 38, wherein the second sequence comprises analyzing the current step, analyzing a prior step after analyzing the current step, and analyzing a future step after analyzing the prior step.

40. The method of claim 38, wherein the second sequence includes every step of the surgical procedure.

41. The method of claim 37 further comprising:

tracking a position of the component within a surgical field, wherein the consequent step is identified based on the position of the component.

42. The method of claim 37, wherein the component is a multipart component capable of self-identifying composite parts of the multipart component to the computer navigation system.

43. The method of claim 42, wherein the multipart component comprises a tool with an attached device, wherein the tool can identify the attached device.

44. The method of claim 42, wherein the multipart component is a tool with an attached device, wherein the attached device is separately identifiable.

45. The method of claim 37, further comprising:

configuring the consequent step with a parameter of the component.

46. The method of claim 37, wherein the consequent step comprises a warning that the component is inappropriate for any step that is analyzed.

47. The method of claim 37, wherein the consequent step includes controlling a piece of auxiliary apparatus.

48. The method of claim 37, further comprising:

identifying a second component that is to be utilized in at least one step of the surgical procedure, wherein the determination of the consequent step is based on the identity of the component, the identity of the second component, and the identity of the current step.

49. The method of claim 37, further comprising identifying the consequent step based on a database of user preferences.

50. The method of claim 37, wherein a first representation is related to the current step and a second representation is related to the consequent step.

(ix) EVIDENCE APPENDIX

None.

(x) RELATED PROCEEDINGS APPENDIX

None.